

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

194. (New) A method of producing a heteromeric taste receptor that responds to sweet taste stimuli comprising:

expressing at least one T1R2 nucleic acid sequence and at least one T1R3 nucleic acid sequence in a recombinant host cell under conditions which result in a heteromeric taste receptor comprising at least one T1R2 and T1R3 polypeptide that binds to and/or is activated by sweet taste stimuli.

195. (New) The method of claim 194, wherein said T1R2 polypeptide is selected from the group consisting rat T1R2, mouse T1R2 and human T1R2 and said T1R3 is selected from the group consisting of rat T1R3, mouse T1R3 and human T1R3.

196. (New) The method of claim 195, wherein said T1R2 and T1R3 are of the same species origin.

197. (New) The method of claim 195, wherein said T1R2 and T1R3 are of different species origin.

198. (New) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide having the amino acid sequence contained in SEQ. ID. No: 6.

199. (New) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide that exhibits at least 90% sequence identity to the polypeptide contained in SEQ. ID. NO: 6.

200. (New) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide that exhibits at least 95% sequence identity to the polypeptide contained in SEQ. ID. NO: 6.

201. (New) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide that exhibits at least 96% sequence identity to the polypeptide contained in SEQ. ID. NO: 6.

202. (New) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide that exhibits at least 97% sequence identity to the polypeptide contained in SEQ. ID. NO: 6.

203. (New) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide that exhibits at least 98% sequence identity to the polypeptide contained in SEQ. ID. NO: 6.

204. (New) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide that exhibits at least 99% sequence identity to the polypeptide contained in SEQ. ID. NO: 6.

205. (New) The method of claim 194, wherein said T1R2 is encoded by the nucleic acid sequence contained in SEQ. ID. NO: 10.

206. (New) The method of claim 194, wherein said T1R2 is encoded by a nucleic acid sequence that hybridizes under stringent hybridization conditions to the nucleic acid sequence contained in SEQ. ID. NO: 10.

207. (New) The method of claim 194 which said T1R2 polypeptide is a fragment of the polypeptide encoded by SEQ ID NO: 10 that when expressed in association with a T1R3 polypeptide yields a T1R2/T1R3 taste receptor that binds and/or is activated by sweet taste stimuli.

208. (New) The method of claim 194, wherein said T1R2 comprises a fragment of the human T1R2 polypeptide contained in SEQ. ID. NO: 6 that when expressed in association with a T1R3 polypeptide results in a heteromeric T1R2/T1R3 taste receptor that binds and/or is activated by sweet taste stimuli.

209. (New) The method of claim 194, wherein said T1R3 is a human T1R3 polypeptide having the amino acid sequence contained in SEQ. ID. NO: 7.

210. (New) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 90% Sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

211. (New) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 95% Sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

212. (New) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 96% Sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

213. (New) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 97% Sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

214. (New) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 98% Sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

215. (New) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 99% Sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

216. The method of claim 194, wherein said T1R3 is a rat T1R3 polypeptide having the sequence contained in SEQ. ID. NO: 4.

217. (New) The method of claim 194, wherein the T1R3 polypeptide is encoded by a nucleic acid sequence contained in SEQ. ID. NO: 9.

218. (New) The method of claim 194, wherein said T1R3 polypeptide is encoded by a nucleic acid sequence that hybridizes to the nucleic acid sequence contained in SEQ. ID. NO: 9 under stringent hybridization conditions or a fragment thereof that encodes a T1R3 polypeptide which when expressed in

association with a T1R2 polypeptide yields a heteromeric taste receptor that responds to sweet taste stimuli.

219. (New) The method of claim 194, wherein said T1R2 and said T1R3 nucleic acid sequences are each operably linked to a constitutive promoter.

220. (New) The method of claim 194, wherein, said T1R2 and said T1R3 nucleic acid sequences are each operably linked to an inducible promoter.

221. (New) The method of claim 194, wherein said T1R2 and T1R3 nucleic acid sequences are expressed in a prokaryotic cell.

222. (New) The method of claim 194, wherein said T1R2 and T1R3 nucleic acid sequences are expressed in a eukaryotic cell.

223. (New) The method of claim 221, wherein said cell is a mammalian, yeast, insect or amphibian cell.

224. (New) The method of claim 221, wherein said cell is a HEK-293 cell, COS cell, CHO cell, or Xenopus oocyte.

225. (New) The method of claim 224, wherein the cell is a HEK-293 cell.

226. (New) The method of claim 194, wherein said cell expresses a G protein.

227. (New) The method of claim 226, wherein said G protein is a promiscuous G protein.

228. (New) The method of claim 226, wherein said G protein is G_{α15}, G_{α16} or gustducin.

229. (New) The method of claim 194, wherein said T1R2 and T1R3 polypeptides are expressed on the surface of said cell.

230. (New) The method of claim 194, wherein either of said T1R2 and T1R3 nucleic acid sequences are attached to a nucleic acid sequence that encodes a detectable label.

231. (New) The method of claims 194, wherein said cell stably expresses said T1R2 and T1R3 nucleic acid sequences.

232. (New) The method of claim 194, wherein said cell transiently expresses said T1R2 and T1R3 nucleic acid sequences.

233. (New) The method of claim 194, wherein said cell stably or transiently expresses a T1R2 sequence having the amino acid sequence contained in SEQ ID NO: 6 and a T1R3 sequence having the amino acid sequence contained in SEQ ID NO: 7.

234. (New) The method of claim 232 wherein said cell is further expresses G_{α15}, G_{α16} or gustducin.

235. (New) The method of claim 233 wherein said cell is a HEK -293 cell.